

REMARKS

Claims 1-22 are currently pending in the subject application, and are presently under consideration. Claims 1-22 stand rejected. Claims 1, 2, 8, 14, 15, 17 and 18 have been amended and claim 7 has been cancelled. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1, 7-8, 14-19 and 21 Under 35 U.S.C. §102(b)

Claims 1, 7-8, 14-19 and 21 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Publication No. 2002/0049041 to Marshall, et al. ("Marshall"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended to incorporate claim 7 by reciting a transmitter that is coupled to provide a transmitter output signal to a third node, thus clarifying that the output of the transmitter (the third node) is different from the second node. This amendment further makes clear that the "circuitry coupled to establish the common mode voltage at the second node", which is recited in claim 1, is also different from the transmitter that is coupled to the third node. A review of claim 1 demonstrates that Marshall does not anticipate the transceiver of amended claim 1 since Marshall fails to teach the structural and functional interrelationships between the recited receiver, transceiver and circuitry in combination with the recited first, second and third nodes.

The Office Action contends that the receiver establishes a common mode voltage at the node between 114 and 110 and that either the transmitter 104 or the switch 112 establishes the same common mode voltage at the node between 112 and 108. Office Action at page 2, lines 10-14. However, Marshall is silent on establishing a common mode voltage at any node in its various embodiments, especially not the same common mode voltage at the node between 114 and 110 and at the node between 112 and 108, as alleged in the Office Action. The DC voltage V_c at the line 110 via the switch 114 is clearly not the same as electrical ground provided to the line 108 via the switch 112.

Additionally, the transmitter recited in amended claim 1 provides a transmitter output signal to a third node, which is different from the second node. In contrast, a second node to which circuitry is coupled to provide the same common mode voltage (as established by the

receiver) in claim 1 is absent from the circuitry in Marshall's FIGS. 3 and 4. Consequently, in contrast to claim 1, there is no low impedance path between first and second nodes (configured as recited in claim 1) during a transmit mode as shown by the circuit of FIG. 3 of Marshall, which first and second nodes of claim 1 also define a high impedance path during another operating mode, identified in the Office Action as the receive mode of FIG. 4 of Marshall. For instance, since the transmitter is coupled to the third node in claim 1, the transmitter of Marshall, cannot correspond to the circuitry of claim 1 as suggested in the Office Action. Additionally, the switch 112 is open during the transmit mode and hence is disconnected from the output of the line 108, such that the ground connection and/or switch 112 fail to provide structure that can correspond to the circuitry recited in claim 1. Thus, there is no low impedance path in the transmit mode of Marshall between nodes configured as the first and second nodes recited in amended claim 1, which diverts electrical current away from the first node to which the receiver is connected.

In its rejection of original claim 7, which has been cancelled and incorporated in to claim 1, the Office Action alleges that the transmitter 104 of Marshall is coupled to provide a transmitter output signal at a third node, but fails to identify where such node might exist in the circuits of FIGS. 3 and 4 of Marshall. Applicant submits that the failure to identify such third node, as the Office Action had done for each of the first and second nodes, is because it would become manifest that, in the circuitry of Marshall, the output of the transmitter 104 is the second node identified in the Office Action, thereby demonstrating a deficiency in the teachings of Marshall relative to the transceiver in amended claim 1.

If the rejection of claim 1 is maintained, Applicant respectfully requests that the Examiner identify with specificity which nodes in Marshall correspond to the first, second and third nodes and operate so as to provide the low impedance path and high impedance path recited in amended claim 1. Applicant submits that no such nodes can be identified in Marshall due to the clear structure differences between amended claim 1 and the circuits disclosed in Marshall. Therefore, reconsideration and allowance of amended claim 1 is respectfully requested.

Regarding claim 8, which has been amended to depend from claim 1, the Office Action cites to the antenna 102. Applicant agrees that an antenna is coupled between the output of the transmitter and the input of the receiver, but would assert that such a position further vitiates the

prior position in the Office Action regarding what circuitry (104 or 112) in Marshall might correspond to circuitry that is coupled to the second node to establish the common mode voltage. Accordingly, for these reasons and those discussed with respect to claim 1, reconsideration and allowance of amended claim 8 are respectfully requested.

Claim 14 has been amended to specify that the first and second operating modes are transmit and receive modes, respectively. Claims 15 and 17 have been amended to be consistent with the amendment to claim 14.

Regarding claim 14, the Office Action asserts that claim 14 is rejected for the same reasons as claim 1. However, this rationale fails to appreciate differences in the transceiver of claim 14 relative to what is recited in claim 1. In particular, claim 14 recites (in means plus function format) that structure is provided for maintaining a common mode voltage at each of first and second nodes. Similar to as discussed with respect to claim 1, no structure is disclosed (either explicitly or inherently) in Marshall for maintaining a common mode voltage at such nodes, such that claim 14 is not anticipated by Marshall.

Additionally, in contrast to Marshall, claim 14 recites means for connecting and disconnecting the first and second nodes during transmit and receive operating modes. The structure disclosed in specification (as construed pursuant to 35 U.S.C. §112, sixth paragraph) is a switch. See, e.g., Present Application at page 6, lines 5-13. In contrast to claim 14, Marshall discloses no switch or equivalent structure that interconnects first and second nodes at which the common mode voltage is being maintained. Even if reliance were shifted to U.S. Patent Publication No. 2005/0107043 to Avsarala et al. (“Avsarala et al.”), this patent publication makes abundantly clear that a high impedance is provided in the switch 218 during a transmit mode and a low impedance exists in the switch during the receive mode. See Avsarala et al. at Para. [0022]. Thus, Avsarala et al. teaches away from the proposition in the Office Action in its rejection of claims 2, 9-11, 13, 20 and 22. Accordingly, Applicant respectfully request reconsideration and allowance of claim 14.

Claim 16 has been amended to make explicit that which should have been understood through antecedence basis established in claim 15 from which claim 16 depends. The Office Action alleges that Marshall teaches means for diverting current away from the first node during the first operating mode (which means is introduced in claim 15) that also includes a low

impedance path coupled to the second, citing FIG. 4 of Marshall corresponding to the receive mode. In contrast to the position in the Office Action, claim 16 relates explicitly to the transmit mode, such that the configuration of Marshall's FIG. 4 is not applicable. As mentioned above, the means for diverting electrical current is recited as structure that diverts electrical current away from the first node (to which the receiver is coupled) during the transmit mode. Accordingly, Applicant respectfully requests reconsideration and allowance of claim 16.

Claim 17 has been amended to correct a typographical error (the antenna means is connected between the first and third nodes) and to make claim 17 consistent with the amendments to claim 14. The Office Action contends that the transmitter 104 of Marshall provides a transmission signal at a third node. However, this appears to contradict the position taken regarding claim 1 (which is relied on to reject claim 14) since the Office Action contends that the second node is between line 108 and switch 112 and there is no teaching in Marshall that a common mode voltage is maintained at each of the lines or switches that the Office Action considers to correspond to the claimed first and second nodes. Moreover, the Office Action has stated that in its interpretation of Marshall, the antenna is connected between the first and second nodes, whereas claim 17 has been corrected to recite that the antenna means is connected between the first and third nodes. It is evident that the antenna of Marshall cannot be both connected between the first and second nodes, as stated in the Office Action, and between the first and third nodes as claimed. Accordingly, reconsideration and allowance of claim 17 is respectfully requested.

Claim 18 has been rejected for the same reasons as claims 1 and 14. Claim 18 has been amended to include a recitation of providing a transmission signal to a third node. Thus, similar to as in claim 1, it is clear that the third node is different from the second node. Additionally, claim 18 also recites that the first and second nodes are connected during a transmit operating mode to provide a low impedance path for propagating a transmission signal away from the first node. There is no basis in the rejection of claim 1 to support the connection of first and second nodes as recited in claim 18. Since a prima facie case of unpatentability has not been established regarding claim 18, claim 18 should be allowed. Moreover, there is no teaching in Marshall of connecting the first and second nodes as recited in claim 18. Accordingly, for these reasons and for the reasons discussed above with respect to claim 14, reconsideration and allowance of claim

18 is respectfully requested. Claims 19-22 depend from claim 18 and are therefore also patentable.

Claim 19 has been amended to delete the providing the transmission signal portion since this has been added to its base claim 18. As discussed above with respect to claim 1, Marshall does not teach establishing the same common mode voltage at first and second nodes, which nodes are connected together during a transmit mode (as in claim 18) to define the low impedance path so that the transmission signal can be provided to such low impedance path and away from the first node. Instead, Marshall provides a DC voltage at a node to which the receiver is coupled during a transmit mode (FIG. 3) and grounds an input of a transceiver during a receive mode (FIG. 4). Accordingly, Applicant respectfully requests reconsideration and allowance of claim 19.

For the reasons described above, claims 1, 7-8, 14-19 and 21 are patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

II. Rejection of Claims 3 Under 35 U.S.C. §103(a)

Claims 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Marshall. Withdrawal of this rejection is respectfully requested for at least the following reasons.

The Office Action contends that it would be obvious from Marshall to use a controller coupled to operate a switch 116 based on the operating mode. However, reference number 116 in Marshall is not a switch but instead is utilized to demonstrate a link between the switches 112 and 114 to ensure that they operate in a mutually exclusive manner. See Marshall at para. [0019]. Regardless of whether it would be obvious to employ a controller to switch the switches 112 and 114 as taught by Marshall, the link 116 does not represent (or even suggest) the use of a switch to connect the first and second nodes as recited in claim 2 from which claim 3 depends.

Moreover, this rejection is inconsistent with the admitted deficiency of Marshall. In particular, the Office Action admits that Marshall fails to teach a switch device connected between the first and second nodes as recited in claim 2 from which claim 3 depends. See Office Action at Page 6, lines 4-5. The Office Action then relies on Avasarala et al. in its rejection of claim 2. As discussed with respect to claim 14, however, Avasarala et al. teaches that a high impedance is provided in the switch 218 during a transmit mode and a low impedance exists in

the switch during the receive mode. See Avasarala et al. at Para. [0022]. Thus, Avasarala et al. teaches away from what is being claimed and thus is inconsistent with the position taken in the Office Action.

For the reasons discussed above, withdrawal of this rejection is respectfully requested.

III. Rejection of Claims 4-6 and 12 Under 35 U.S.C. §103(a)

Claims 4-6 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Marshall in view of U.S. Publication No. 2006/0256744 to Kim, et al. ("Kim"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Before discussing the rejection of claims 4-6, it should be pointed out that claim 4 recites that the receiver (introduced in claim 1) comprises the amplifier and resistor of claim 4. The Office Action contends that Kim discloses a resistor 508 coupled between the first node and the output of an amplifier 502, citing FIG. 1 of Kim. Office Action, at page 5, lines 1-2. However, an attempt to read claim 4 onto Kim as interpreted in the Office Action demonstrates a clear deficiency in Kim relative to claim 4. In particular, the Office Action states that the amplifier 502 of Kim corresponds to the amplifier in claim 4. Claim 4 also recites that a resistor is coupled between the first node (from claim 1) and an output of the amplifier. Thus, based on the interpretation in the Office Action, the output of amplifier 502 must be interpreted as corresponding to the output of the amplifier recited in claim 1. Under such interpretation, this further requires that the other end of the resistor 508 must be connected to the first node. See Exhibit A, submitted herewith, which includes a marked-up copy of FIG. 1 from Kim. However, such an interpretation is erroneous since claim 1 recites that the receiver establishes a desired common mode voltage at the first node as well as the first node being part of a low impedance path and a high impedance path depending on the operating mode. In sharp contrast, Kim specifically teaches that the resistor (a pull-up resistor) 508 is used to couple the transmission line 104 to a high voltage source in order to form a line terminator of a bidirectional bridge circuit. Kim, at para. [0034]. Due to the divergent teachings in Kim relative to Marshall and what is recited in claim 4, Applicant respectfully submits that it would not be obvious to create the subject matter of claim 4 by combining the teachings of Kim with the teachings of Marshall. Instead, Applicant submits that there is not proper motivation to combine such teachings and that

if combined, there is no rational basis or reasoning that could be followed to provide the transceiver recited in claim 4.

Regarding claim 5, the Office Action contends that a feedback path 510 from Kim corresponds to the feedback path of claim 5. However, as discussed above, when one considers which nodes the resistor is coupled between, it becomes clear that the feedback 510 of Kim is not connected between an input of the amplifier 510 and the first node (it must be recalled that the Office Action has interpreted the resistor 508 as being connected between the output of the amplifier 502 and the first node. See Exhibit A regarding the feedback 510. Accordingly, there is no rational basis that would enable one of ordinary skill in the art to couple a feedback path between an input of an amplifier and the first node, as recited in claim 5, based on any combination of the teachings in Kim and Marshall. In fact, the feedback 510 in Kim does not appear to be connected in any way to an input of the amplifier 502 or even to the first node consistent with interpretation of Kim relied on in its rejection of claim 4. Accordingly, reconsideration and allowance of claim 5 are respectfully requested.

Regarding claim 6, the Office Action relies on Marshall, generally referring to FIGS. 3 and 4, but failing otherwise to provide any articulated reasoning with any rational underpinning to support the legal conclusion of obviousness. Since the only structures in Marshall that could reasonably be amplifiers are the transmitter and receiver and since the Office Action has interpreted the second node as a node between 112 and 108, it is presumed that the reference to FIGS. 3 and 4 meant to refer to the transmitter 104. However, as discussed with respect to claim 1, there is no evidence in Marshall to support the proposition that the transmitter 104 establishes a common mode voltage at any node, which is the same common mode voltage as established by the receiver (claim 1). Moreover, there is no evidence to support the contention that Marshall or Kim teaches the circuitry having feedback as recited in claim 5. For these reasons, the Office Action has failed to present a prima facie case of unpatentability. Accordingly, reconsideration and allowance of claim 6 are respectfully requested.

Claim 12 is patentable over Kim and Marshall for substantially the same reasons discussed above with respect to claims 4-6.

For the reasons discussed above, claims 4-6 and 12 are patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 2, 9-11, 13, 20 and 22 Under 35 U.S.C. §103(a)

Claims 2, 9-11, 13, 20 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Marshall in view of U.S. Patent Publication No. 2005/0107043 to Avasarala et al. ("Avasarala et al."). Withdrawal of this rejection is respectfully requested for at least the following reasons.

The Office Action admits that Marshall fails to teach a switch device connected between the first and second nodes. Office Action at page 6, lines 4-5. The Office Action desires to make up for the admitted deficiencies of Marshall by relying on Avasarala et al. However, Avasarala et al. explicitly teaches that the switch 218 exhibits a high impedance during a transmit mode and a low impedance the receive mode. See Avasarala et al. at Para. [0022]. Consequently, according to Avasarala et al., during the transmit mode, the high impedance of the switch 518 would serve to substantially decouple the nodes that are connected by the switch 218. Additionally, during the receive mode, Avasarala et al. teaches that the switch 218 has a low impedance that would operate to connect the nodes to which the switch is connected. Thus, Avasarala et al. teaches away from the proposition in the Office Action and what is explicitly recited in claim 2. For these reasons, the rationale applied in the Office Action fails to establish a line of reasoning that would support the conclusion that claim 2 would be obvious in view of the combination of Marshall and Avasarala et al.

Claim 11 is patentable over Marshall and Avasarala et al. for similar reasons to those discussed herein with respect to claims 1 and 2. Additionally, the Office Action contends that a link 116 corresponds to a switch device. However, as discussed with respect to claim 3, reference number 116 in Marshall is not a switch but instead is utilized to demonstrate a link between the switches 112 and 114 to ensure that they operate in a mutually exclusive manner. See Marshall at para. [0019]. Regardless, the link 116 does not represent (or even suggest) the use of a switch to connect the first and second nodes as recited in claim 11. The Office Action also seeks to interpret the transmitter 104 as being both a transmitter that provides a transmitter output signal to a third node (corresponding to line 108) and an amplifier that is coupled to establish a common mode voltage at a second node. This inconsistency requires that the amplifier must be 106 since the transmitter cannot correspond to both features that are recited in

claim 11. Additionally, the other alternative contention is that the receiver 106 corresponds to the amplifier that is recited in claim 11. However, again, the Office Action contends that the receiver 106 in Marshall correspond to the receiver of claim 11. As a result of the interpretations set out in the Office Action, there is no structure disclosed in Marshall that can correspond to the amplifier of claim 11, which is coupled to establish the common mode voltage at a second node, such that the basis in the Office Action fails to establish a prima facie case of unpatentability regarding claim 11.

Additionally, the Office Action relies on Avasarala et al. for its teaching of a switch 218. However, as discussed with respect to claim 2, the switch disclosed in Avasarala et al. does not cure the deficiencies of Marshall alone or if combined with the teachings of Marshall.

For these reasons, claim 11 is not made obvious by the combination of Avasarala et al. and Marshall. Accordingly, claim 11 and claims 12-13 are patentable and their allowance is respectfully requested.

Regarding claim 22, Applicant submits that Avasarala et al. fails to teach the configuration of the amplifier and impedance element for the reasons discussed above with respect to claim 4. Accordingly, reconsideration and allowance of claim 22 are respectfully requested.

V. CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 106.

No additional fees should be due for this response. In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 20-0668 of Texas Instruments Incorporated.

I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office via electronic filing on March 19, 2008.

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EXHIBIT A

